II. **REMARKS**

The Office Action dated January 10, 2007, has been received and carefully noted. The amendments made herein and the following remarks are submitted as a full and complete response thereto.

Claims 1, 3, 4, 6 and 7 are pending.

By this Amendment, claim 1 is amended, and claim 2 is canceled. Support for the amendment can be found in the specification and claims as originally filed. For example, support for the amendment to claim 1 can be found on page 3, line 10; page 6, lines 12-17 and 21-22; and Figure 2 of the specification. Applicants believe that no new matter is added. Applicants respectfully request reconsideration and withdrawal of all rejections.

Claims 1-4, 6 and 7 have been rejected under 35 U.S.C. § 102(e) over Baker et al. (U.S. Patent No. 6,485,858). Applicants traverse the rejection.

Present claim 1 is directed to a "catalyst particle comprising an active metal and a carrier composed of a carbon material, wherein said active metal is supported by cavities having an average diameter of 0.5 to 5 nm formed on a surface of said carrier and their edge portion, wherein said carrier has an average particle size of 0.01 to 10 μm, wherein said carrier comprises a mesophase carbon composed of oriented crystallites comprising a basal plane having a cyclic structure and an edge having functional groups of –OH and –COOH" (emphasis added).

In contrast to the presently claimed invention, Applicants submit that Baker et al. merely discloses a "fuel-cell electrode comprised of a dispersion of one or more noble metals, alloys or bimetallics thereof, on graphite nanofibers characterized as: a) comprised of graphite sheets that are substantially parallel or perpendicular to the longitudinal axis of the nanofiber; and b) having at least about 95% of their exposed

surfaces comprised of edge regions" (Baker et al., col. 2, lines 20-27) (emphasis added). Applicants submit that Baker et al. discloses graphite nanofibers having the following characteristics: (i) a surface area from about 0.2 to about 3,000 m^2/g, (ii) a crystallinity from about 50% to about 100%, and (iii) interstices of about 0.335 nm to about 0.67 nm, wherein the nanofibers can also have widths from about 0.75 nm to about 1,000 nm (Baker et al., col. 3, lines 16-31).

Applicants submit that the nanofibers disclosed in Baker et al. differ from the presently claimed invention. For example, the catalyst particles of the presently claimed inventions have at least the following distinguishing features: (1) comprising an active metal and a carrier composed of a carbon material, (2) the active metal is supported by cavities having an average diameter of 0.5 to 5 nm formed on a surface of the carrier and their edge portions, (3) the carrier has an average particle size of 0.1 to 10 μm, and (4) the carrier comprises a mesophase carbon composed of oriented crystallites comprising a basal plane having a cyclic structure and an edge having functional groups of –OH and –COOH. Applicants submit that in the carrier of the catalyst particle of the presently claimed invention, the edge has functional groups which have a larger bonding force to active metal than to the basal plane. Applicants submit that this feature helps make possible its use as a catalyst for the dehydrogenation of alcohols in, for example, chemical heat pumps and thermally regenerative fuels cells in high hydrogen-generating activity, wherein the active metal can be held for a long period of time, showing stable catalytic activity (see page 6, lines 13-19 and Figure 2, and page 11, lines 17-21 of the specification).

Applicants submit that although Baker et al. discloses graphite nanofibers which may contain a functional group and have a crystallinity greater than about 90%, Baker does not teach or suggest a catalyst particle comprising an active metal and a carrier comprising a mesophase carbon composed of oriented crystallites comprising a basal plane having a cyclic structure and an edge having functional groups of –OH and –COOH (present claim 1).

As such, Applicants submit that Baker et al. fails to teach or suggest all of the elements of the presently claimed invention, as set forth in independent claim 1 and dependent claims 3, 4, 6 and 7. Therefore, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 1-4, 6 and 7 under 35 U.S.C. § 102(e) over Baker et al.

III. CONCLUSION

Applicants respectfully submit that this application is in condition for allowance and such action is earnestly solicited. If the Examiner believes that anything further is desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below to schedule a personal or telephone interview to discuss any remaining issues.

In the event this response is not timely filed, the Applicants hereby petition for an appropriate extension of time. The fee for this extension, along with any other additional fees which may be required with respect to this response, may be charged to Deposit Account No. 01-2300, referencing Attorney Docket No. **100347-00002**.

Respectfully submitted,

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